



**THE PORT AUTHORITY
OF NY & NJ**

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CHIEF MECHANICAL ENGINEER

HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE CONTRACT DRAWINGS CONSTITUTING A PART OF CONTRACT NO. [] IN THE FORM IN WHICH SAID DRAWINGS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.

DATE 7-15-97 *[Signature]* SPEC. WRITER
DATE 7/18/97 *Peter K. Sweeney* ENGINEER OF DESIGN

No. Date Revision Approved

Engineering Department
Design Division

The World Trade
Center

Title
**FIRE ALARM SYSTEM
DEVICE UPGRADE
PHASE III**

**MECHANICAL
RETURN AIR SMOKE
DETECTORS ARRANGEMENT
PART PLANS
ELEVATIONS AND NOTES**

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

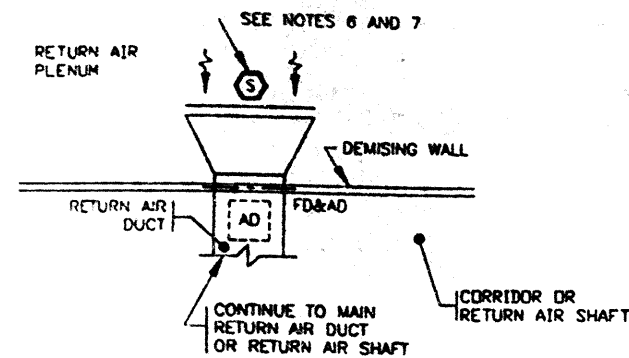
A.Y. E.E. S.W.
Designed by Drawn by Checked by

Date 2/14/97 Scale NONE

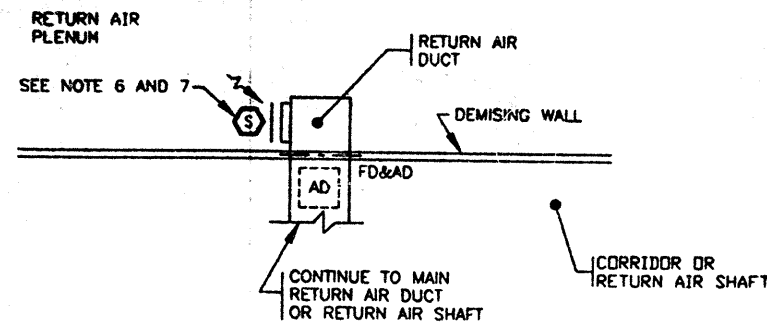
Contract Number Drawing Number
WTC-861.077 M-1

RETURN AIR SMOKE DETECTORS INSTALLATION NOTES.

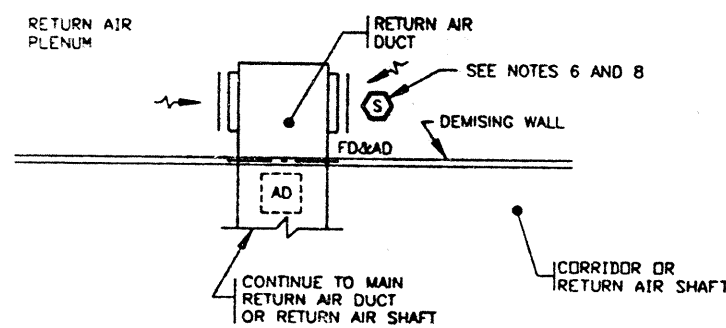
1. REFER TO ELECTRICAL DRAWINGS FOR GENERAL LOCATIONS, DETAILS AND SPECIFICATIONS OF THE SMOKE DETECTORS.
2. ALL SMOKE DETECTION DEVICES SHALL BE INSTALLED AS SHOWN ON DRAWING E-17 AND IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. SMOKE DETECTORS TO BE INSTALLED IN FRONT OF RETURN AIR GRILLES/OPENINGS SHALL BE DESIGNED FOR HIGH AIR VELOCITY APPLICATION, WITH A RANGE FROM 0 TO 1,200 FEET PER MINUTE.
4. THE CONTRACTOR SHALL FIELD VERIFY, AND OBTAIN APPROVAL BY THE ENGINEER, THE EXACT LOCATION AND THE NUMBER OF SMOKE DETECTORS NECESSARY PRIOR TO THE INSTALLATION.
5. THE PLACEMENT AND NUMBER OF THE SMOKE DETECTORS WITH RESPECT TO THE RETURN AIR OPENING SHALL BE INSTALLED AS SHOWN ON THE TYPICAL ARRANGEMENT PART PLANS AND ELEVATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE TYPICAL DETAILS DUE TO ACTUAL FIELD CONDITION, AND INSTALL THE NECESSARY SMOKE DETECTORS AS DIRECTED BY THE ENGINEER.
6. FOR OPENING WHERE SMOKE DETECTION IS REQUIRED, SMOKE DETECTORS SHALL BE INSTALLED 8" IN FRONT OF THE RETURN AIR OPENING AND AT THE CENTERLINE OF THE OPENING HEIGHT. INSTALL ONE (1) SMOKE DETECTOR FOR OPENING WITH WIDTH EQUAL OR LESS THAN 36". SEE TYPICAL ARRANGEMENT ELEVATION "X"; INSTALL TWO (2) SMOKE DETECTORS FOR OPENING WITH WIDTH GREATER THAN 36". SEE TYPICAL ARRANGEMENT ELEVATION "Y".
7. FOR RETURN AIR DUCT WITH A SINGLE OPENING, INSTALL SMOKE DETECTOR(S) AS SHOWN ON TYPICAL ARRANGEMENT PART PLANS '1A' AND '1B' AND IN ACCORDANCE TO NOTE #6.
8. FOR RETURN AIR DUCT WITH TWO OPENINGS, INSTALL SMOKE DETECTOR(S) ONLY IN FRONT OF THE SMALLER OPENING AS SHOWN ON TYPICAL ARRANGEMENT PART PLANS '2A' AND '2B' AND IN ACCORDANCE TO NOTE #6.
9. FOR RETURN AIR DUCT WITH THREE OPENINGS, INSTALL SMOKE DETECTOR(S) ONLY IN FRONT OF THE OPENING AS SHOWN ON TYPICAL ARRANGEMENT PART PLAN '3' AND IN ACCORDANCE TO NOTE #6.
10. DO NOT INSTALL SMOKE DETECTORS AT TRANSFER AIR OR SUPPLY AIR OPENINGS.
11. ANY WORK TO BE PERFORMED THAT REQUIRES AN HVAC EQUIPMENT SHUTDOWN OR INTERRUPTION TO NORMAL OPERATION SHALL BE PERFORMED DURING OFF-HOURS, OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE AUTHORITY OF ANY EQUIPMENT SHUTDOWN 48 HOURS PRIOR TO THE FIELD WORK.
12. REFER TO REFERENCE DRAWING REF-M-1 FOR THE PROPOSED SMOKE DETECTORS ADDRESS ASSIGNMENT.



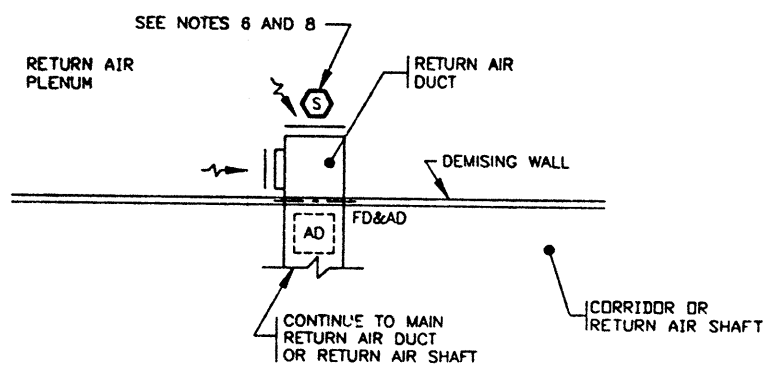
TYPICAL ARRANGEMENT PART PLAN "1A"



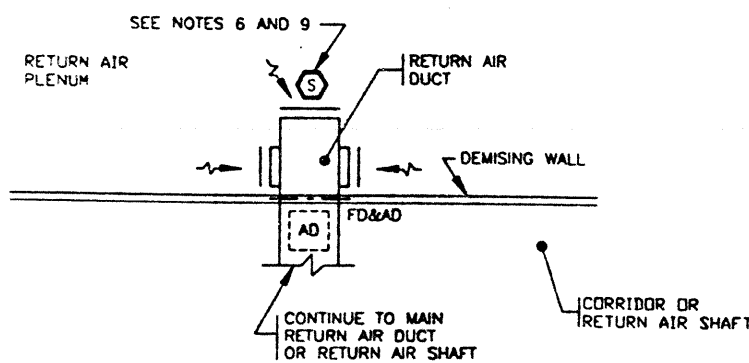
TYPICAL ARRANGEMENT PART PLAN "1B"



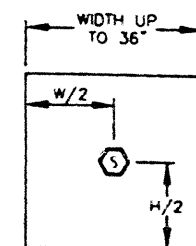
TYPICAL ARRANGEMENT PART PLAN "2A"



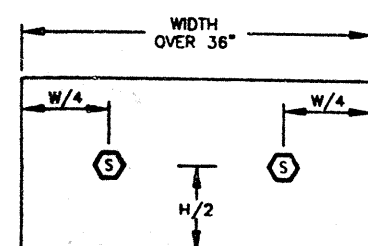
TYPICAL ARRANGEMENT PART PLAN "2B"



TYPICAL ARRANGEMENT PART PLAN "3"



**TYPICAL ARRANGEMENT
ELEVATION "X"**



**TYPICAL ARRANGEMENT
ELEVATION "Y"**

LEGEND

	EXISTING DUCTWORK
	EXISTING VOLUME DAMPER
	EXISTING DUCT WITH FIRE DAMPER
	EXISTING DUCT WITH RETURN GRILLE
	FIRE DAMPER AND ACCESS DOOR
	NEW SMOKE DETECTOR
	FIRE DAMPER
	DUCT HEIGHT
	DUCT WIDTH
	EXISTING ACCESS DOOR